STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7440

Petition of Entergy Nuclear Vermont Yankee)
LLC and Entergy Nuclear Operations, Inc., For)
Amendment of their Certificates of Public Good)
and other approvals under 10 V.S.A. §§ 6501-6504)
and 30 V.S.A. §§ 231(a), 248 & 254, for authority)
to continue after March 21, 2012, operation of the)
Vermont Yankee Nuclear Power Station, including)
storage of spent nuclear fuel)

MEMORANDUM OF LAW, PROPOSED FINDINGS, AND PROPOSED CONCLUSIONS SUBMITTED ON BEHALF OF VPIRG

1. Risk of Harm

The continued operation of the Vermont Yankee nuclear generating station necessitates the continued operation of its spent fuel pool. A loss of coolant in the spent fuel pool could inflict ñhugeò economic harm, according to the testimony of DPS witness David Lamont. 6/3/09 Tr. p.12, lines 6-13. PSB review of economic harm from loss of coolant is not preempted by federal law[1], but ENVY has submitted no evidence that analyzes the risk of this potentially huge harm. What would the cost to Vermont be if there were a partial loss of coolant? What would the cost to Vermont be if the spent fuel pool lost all of its coolant? What types of economic harm would Vermont suffer -- would surrounding school districts and towns be bankrupted by plummeting real estate values, would the Vermont tourist economy dry up, would Vermontôs health care system stagger under the costs of treating victims, would state government spending need to leap upward while facing unprecedented dropoffs in General Fund revenues? What would the cost be to neighboring states? Given that the liability of Entergy Nuclear Vermont

[1] Pacific Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 103 S.Ct. 1713, 75 L.Ed.2d 752 (1983).

Yankee is limited by federal law[2], who would pay for each or any of these costs? Will Congress authorize partial or complete compensation for damages suffered by individuals, states or towns that remain unpaid after the federal liability limit is reached? What would the Vermont ratepayer end up having to pay? Instead of submitting analysis of any of these questions, ENVY has objected to VPIRGôs attempt to bring to the Boardôs attention any analysis of the likelihood and extent of the harm testified about by witness Lamont. Further, ENVY has objected to the Board taking administrative or judicial notice of the study of these issues submitted by the blue-ribbon panel of experts at the National Research Council of the National Academies of Science to the United States Congress at Congressôrequest. ENVYôs position is that the Board should conclude that the continued operation of Vermont Yankee serves ñthe general goodò without submitting any analysis of the potentially huge economic harm that continued loading of spent fuel into the spent fuel pool may impose on the people of Vermont.

ENVYôs position departs from two decades of Board precedent.

1.A. The Board's Precedents on Assessment of Risk

In 1988, in Re: Department of Public Service, Docket No.5248, 91 P.U.R.4th 38, the Board determined whether to grant the Departmentôs request that it sell Ontario Hydro power to New England Power Company. The Board, citing § 248, held that because the ñgeneral goodò standard governed, analysis of the ñbenefits, costs and risksò of the proposed action in comparison to the benefits, costs and risks of alternatives was required:

> Section 211 also requires a finding that the sale be in furtherance of Vermont's needs, a requirement that is generally consistent with the standard normally applied in our independent discretionary review of utility power purchases and investments-namely, whether the proposed action will ñpromote the general good of the state.ò See, e.g., 30 V.S.A. § 248. We adopt this standard in our independent discretionary review of the Department's sales under § 211. This standard requires, at a minimum, an analysis of the benefits, costs, and risks of the

[2] 42 U.S.C. § 2210.

proposed sale, in comparison to other options available to the Department.

In 1990, in Docket No. 5270, Re: Least Cost Investment, Energy Efficiency, Conservation and Management of Demand for Energy (4/16/90), Green Mountain Power and Central Vermont Public Service objected to a proposed environmental ñadderò to account for environmental external costs. The utilities argued that without precise figures as to the cost to society of supply-side sources, it would be improper to include any approximation of their cost. The Board rejected the argument that it must ignore potential harms for which precise analytical tools are unavailable:

> We may not yet have the tools to monetize these costs precisely, but that is no reason to treat them as having no value at allé
>
> It would be counterproductive and inconsistent for this Board to allow utilities to continue to ignore these factors in resource planningé
>
> The Board concludes that failing to count costs that are known but not precisely measurable would, in effect, ignore them, thereby skewing utility resource decisions.

Later in 1990, the Board issued its decision in the Hydro-Quebec case, Docket No. 5330, Application of Twenty-Four Electric Utilities (10/12/90). The Board approved the purchase of 340 MW of Hydro-Quebec power and rejected the proposed purchase of 110 MW of Hydro-Quebec power after proceedings that, at the time, had been the most exhaustive in PSB history. The Department and virtually every utility in Vermont supported purchase of the full 450 MW. The Board reasoned that existing HQ facilities had not caused harm to Vermont, but that 110 MW of the contracted-for power would be from new facilities. Because numerous species of migratory birds found in Vermont and Quebec could potentially be placed at risk by new construction, the burden was on the Petitioners to prove that they would not be harmed.

The Board addressed, at length, the unknowns and uncertainties about the risks from the

proposed new construction in James Bay. After making detailed findings, the Board concluded that the absence of reliable information did not excuse the Petitioners from meeting their burden of proof; the absence meant that the burden had not been met.

> However, very little is known about the possible direct and cumulative environmental effects on waterfowl species that will result from future construction of the Great Whale and -- in particular -- the NBR projects which affect areas that are physically very different from LaGrande. These projects have the potential, taken together, to significantly alter the overall ecosystems of the James Bay region, with possible resulting impacts on many species of migratory birds in Vermont. Consequently, it is critical to Vermont that adequate cumulative studies and assessments of the environmental impacts of these projects be completed before Vermont utilities take actions that require additional construction in the Great Whale and NBR regions. It is important that the full implications of these projects be understood, so that necessary decisions to mitigate any impacts, change the overall design, or deny the projects if warranted can be made by the appropriate authorities in Canada. These studies will also be critical to any future reviews of the Contract options by this Board.

In the absence of this proof, the ñgeneral goodò standard in the statute could not be satisfied.

> We have concluded above that the 340 MW contract minimum can be supplied from existing resources that are already committed to Vermont. However, the optional 110 MW of the Contract has the potential to contribute to future hydroelectric construction in the James Bay region. In the absence of studies of the cumulative environmental effects of such construction, the Board is unable to find that the purchases that require such construction will promote the general good of the state of Vermont.

10/12/90 Order, Volume II, Part II.B.2.d.

In 1994, in Docket No. 5270-CV-4, Re: Least Cost Investment, Energy Efficiency, Conservation and Management of Demand for Energy (3/24/94), the Board reviewed CVPSô first Integrated Resource Plan. The Hearing Officer found that the plan failed to address ñlow probability/high significanceò events. The Hearing Officer recognized that ñ[s]uch events, by their very nature, are highly uncertain and often not susceptible to quantitative analysis.ò However, the difficulty of analyzing such events does not excuse a utility from examining them. A prudent utility would not neglect to do so. The Board adopted the Hearing Officerôs findings

and conclusions, including the conclusion that failure to address low probability/high significance events was imprudent:

> However, the IRP process also offers a critical opportunity for the Company to perform (at least) limited first-level analyses of certain low probability/high significance events. These include, for example, closure of its single largest supply resource, major structural changes in the economy, otherwise unexpected environmental or legal constraints, and significant engineering developments. Such events, by their very nature, are highly uncertain and often not susceptible to quantitative analysis. However, prudent corporate planners do consider such factors and the IRP is an appropriate way of framing those deliberations, and of sharing them with those who will be affected by them.

In 1994, in its review of the prudence of CVPSôactions in ñlocking inò the HQ contract, Re: Central Vermont Public Service Corp., Docket Nos. 5701, 5724 (10/31/94), the Board held that CVPS had failed to perform economic analysis of the risks involved in committing itself to HQ. This failure to engage in and document analysis of risk to the companyôs ratepayers was found to be imprudent.

> 243. The Company failed to adequately document its assessments of the risks associated with the declining economics of its entitlements under the Contract. Apparently, in August 1991, the Company was willing to bear the significantly increased risks that its share of Contract power might prove non-cost-effective, but CVPS failed to properly document its decision to do so at the time. Rosen pf. at 43.
>
> 244. In the absence of any detailed economic analysis of and consideration of the alternatives to the HQ Contract during the six-month period prior to the lock in (August 28, 1991), the prudence of the Company's decision to lock in cannot be established. However, the failure to perform the requisite analyses during this period was imprudent. Rosen pf. at 7; tr. 9/9/94 at 25.

For this and related reasons, the companyôs rate of return was reduced.

In 1997, the Board again examined the decision-making process at Central Vermont Public Service Corporation, and found that the failure to analyze risk in the Hydro-Quebec lock-in was not an isolated example. The Board found that the company had a pattern of failing to engage in cost-benefit analysis of major decisions (and a pattern of other problems as well), and

found that the company lacked a policy requiring such analyses. The Board found it necessary to order an operational review of the companyôs management in order to cure this problem. Re: Central Vermont Public Service Corporation, Docket 5863, Order dated 4/16/97.

In 2002, the Board reviewed the proposed sale of Vermont Yankee to Entergy. In re: Vermont Yankee Nuclear Power Corporation, Docket No. 6545, Order dated 6/13/02. Again, one of the key factors considered by the Board was risk, and, again, the difficulty of quantifying the risks involved did not cause the Board to pass over these risks in its analysis.

> Quantification of these risks is difficult. The difficulty of reducing the risk transfer benefit to a numeric value, however, does not mean that the benefits are not real. In fact, the analyses presented to the Board in this proceeding, demonstrate that the risk transfer provides a tangible benefit to Green Mountain, Central Vermont and their ratepayers.

Docket 6545, § V.B.1.a(2). For example, one of the risks being transferred was the risk of a shortfall in the decommissioning fund. The Board found this risk to be highly uncertain, and concluded ñWe have no way of knowing which scenario is more probable.ò However, the Petitioners and the Department submitted extensive testimony about this risk, which allowed the Board to conclude that it would promote the general good to transfer this risk to Entergy. Docket 6545, § V.B.1.b(2)(a).

In 2004, the Board heard extensive expert testimony about a low probability/high significance risk with enormous uncertainties -- the risk of childhood leukemia from EMFs. In its ruling dated January 28, 2005 in In re Vermont Electric Power Company, Docket 6545, the Board issued 41 paragraphs of findings about this risk. Based on the extensive record of expert testimony submitted by VELCO and others, the Board was able to conclude that the risk was not undue.

1.B. Admissibility of Evidence as to Risk of Harm

Mr. Lamontôs testimony, that the economic losses that could arise from loss of coolant at the spent fuel pool could be huge, was not met with any objection.

The Board asked VPIRG to brief the question of authentication, and specifically of the role of V.R.E. 902(11), with regard to the admissibility of Lamont Cross Exhibits 1 and 2. (These exhibits were also the subject of VPIRGôs request that the Board take judicial and administrative notice.) VPIRG submits this section of its filing to address these issues by providing an analysis comprised of four components. The first is whether the documents are self-authenticating under V.R.E.902. The second is whether the documents are authenticated under V.R.E. 901. The third is whether the documents are admissible under the doctrine of judicial notice, regardless of whether they have been authenticated, since judicial notice is an alternative to authentication. The fourth is whether the documents and the facts set forth in the May 29, 2009 request are admissible under the rules of administrative notice established by Board Rule 2.216, 3 V.S.A. § 810(1) and 3 V.S.A. § 810(4).

●***Self-Authentication***

The National Academies of Science (NAS) report is self-authenticating under Rule 902(5). This subsection self-authenticates ñbooks, pamphlets or other publications purporting to be issued by public authority.ò The courts treat the NAS as a public agency. Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie, (June 4, 2007) 2007 WL 1601518 (D.Vt.), Erickson v. Baxter Healthcare, Inc., 151 F.Supp.2d 952 (N.D.Ill.2001). Since the HAS report was published on the NAS website and the URL of the website is set forth in the publication, it is self-authenticating. Williams v. Long, 585 F.Supp.2d 679, 77 Fed. R. Evid. Serv. 1408, 14 Wage & Hour Cas.2d (BNA) 453 (D. Maryland 2008). Because there is no written declaration from the custodian, subsection 11 does not apply.

Also, because the NAS is treated as a public agency, the report is not hearsay under V.R.E. 803(8). Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie, *supra*, Erickson v. Baxter Healthcare, Inc., *supra.*

●***Authentication***

The NAS report also meets the standards for authentication under Rule 901. The basic rule is set forth in subpart (a): ñ(a) General Provision. The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.ò By way of illustration only, subpart (b) lists examples of documents that meet this test. Subpart (b)(4) is *Distinctive Characteristics and the Like.* It lists ñAppearance, contents, substance, internal patterns, or other distinctive characteristics, taken in conjunction with circumstances.ò Subpart (b)(7) is *Public Records or Reports.* This illustration states: ñEvidence that a writing authorized by law to be recorded or filed and in fact recorded or filed in a public office, or a purported public record, report, statement, or data compilation, in any form, is from the public office where items of this nature are kept.ò

Reports from the National Academy are routinely admitted into evidence without any sponsoring witness and without any written declaration or affidavit authenticating them. Obviously, it is highly unlikely that someone would try, much less succeed, in faking or altering these publicly available and readily confirmed reports. Thus, the ñappearance, contents, substance, internal patterns, or other distinctive characteristics, taken in conjunction with circumstancesò prove its authenticity[3]. There is no reported decision in which any litigant has

[3] Under the last sentence of V.R.E, 104(a) the Board is not constrained by any of the rules of evidence, other than privilege rules, when it is in the process of ruling on the preliminary questions of admissibility under V.R.E. 901, 902 and 201. See Reporterôs Note, V.R.E. 104(a) and Weinsteinôs Evidence §§ 104[02], 200[05].

objected to an NAS report on grounds of authentication. For example, in Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie, *supra,* Judge Sessions admitted one NAS report as hearsay exception and a second NAS report under the judicial notice doctrine, both over hearsay objections, but without any authentication objection. Similarly, in Erickson v. Baxter Healthcare, Inc., *supra,* a report from the Institute of Medicine, a subsidiary of the National Academy of Sciences, was attached to Plaintiffôs brief. There was no sponsoring witness or affidavit. The report was admitted over defendantôs hearsay objection under Rule 803(8). The court reasoned that the Academy was a quasi-public entity created by Act of Congress specifically to conduct investigations for and report to Congress, and the subject report was within that mandate. The defendant did not make an authentication objection.

Reports from public agencies that are available on the agency website are now routinely deemed to be authenticated under Rule 901, for two reasons. First, any question about the accuracy of the copy submitted can be verified by resort to the website, and second, the public agency can be trusted to include on its website an accurate version of the report it has prepared or that it has paid to have prepared. Williams v. Long, *supra;* U.S. EEOC v. E.I. DuPont de Nemours & Co., No. Civ.A. 03-1605, 2004 WL 2347559 (E.D.La. Oct.18, 2004).

For all of these reasons, the NAS report, submitted as Lamont Cross Exhibit 1, is admissible under Vermont Rule of Evidence 901 (and V.R.E. 803(8)).

ð ***Judicial Notice***

Both the NAS report and Professor Beyeaôs report on behalf of the Attorney General of Massachusetts are admissible under Vermont Rule of Evidence 201 without any need to authenticate the documents. ñThe taking of judicial notice is often merely a way of simplifying the process of authenticating documents which would generally require certification under FRE

901 and 902, and overcoming FRE 1002 best evidence problemsé ò Russell, Barry, Bankruptcy Evidence Manual § 2.05 (2007). Professor McCormickôs treatise states that as a general rule, none of the rules otherwise governing evidence apply to judicially noticed evidence. Trial courts and appellate courts can take judicial notice so long as they comply with due process by informing the parties that this is their intent. The rules on authentication, like the rules on hearsay, do not apply. McCormick on Evidence (3rd ed. 1984) § 333. See, e.g., McCarthy v. Warden, Connecticut State Prison 213 Conn. 289, 567 A.2d 1187, 1189 (Conn. Supreme Ct 1989) (taking judicial notice of records of another court on its own motion, without any sponsoring witness or authentication). Thus, courts often are asked *either* to find that a document has been authenticated *or* to take judicial notice of it. See, e.g, Klein v. Freedom Strategic Partners LLC, 595 F.Supp.2d 1152, 1157 (D.Nev. 2009)(ñIn support of their opposition, Plaintiffs present documents filed with the Nevada Secretary of State regarding FWI and FSP, arguing judicial notice is not required because the records are self-authenticating. Alternatively, Plaintiffs request the Court judicially notice the documents.ò) and Jasso v. Citizens Telecommunication Company of California, Inc., 2009 WL 635249 (E.D.Cal.) (ñIt appears that defendants seek judicial notice of Exhibit A, but not similar Exhibits B and C (state test results), because the latter are directly authenticated by the Esminger and Williams declarationsé ò)

Both documents deserve judicial notice under V.R.E. 201. The rule authorizes judicial notice of facts not subject to reasonable dispute that are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. The NAS report was made at the request of a government agency, pursuant to a statute that authorizes reports to that agency. It is similar to the biennial report of the Commissioner of Taxes, judicially noticed in In re Fulhamôs Estate, 96 Vt. 308, 119 A. 433 (1923). Its findings are

capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. Compare State v. Doria, 135 Vt. 341, 376 A.2d 751 (1977) (judicial notice of accuracy of speed radar). Paragraphs 1-9 of the VPIRG request, and the NAS study, therefore may be judicially noticed.

Dr. Beyeaôs report meets the same standards. The facts he sets forth are not subject to reasonable dispute and are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. The report is based on very conservative assumptions about economic costs, such as the assumption that properties contaminated by radiation will lose only 5% of their value. (Beyea report p.23). Its findings are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. Each source is noted and set forth in the footnotes.

●***Administrative Notice – the two reports and ¶¶ 1-15 of the VPIRG Request***

Board Rule 2.216 adopts 3 V.S.A. § 810. Subsection 4 of § 810 states:

> (4) Notice may be taken of judicially cognizable facts. In addition, notice may be taken of generally recognized technical or scientific facts within the agency's specialized knowledge.

The NAS Report and VPIRG Request ¶¶ *1-9.* If the NAS report and any of paragraphs 1-9 of the VPIRG request (summarizing the report) do not qualify as proper under VRE 201, they qualify under the second sentence of § 801(4). These facts are ñgenerally recognized technical or scientific facts within the agency's specialized knowledge.ò The Public Service Board and its expert staff possess knowledge of the economic (and noneconomic) life-cycle costs of power generation and presumably are knowledgeable about this aspect of the potential costs of nuclear power generation. Based on this expertise, the Board should determine that the NAS report is

what it purports to be, and that its contents and paragraphs 1-9 are accurate[4].

If the NAS report or any of paragraphs 1-9 do not meet the standards of § 810(4), they meet the standards of the third sentence of §801(1). This sentence provides:

> When necessary to ascertain facts not reasonably susceptible of proof under those rules, evidence not admissible thereunder may be admitted (except where precluded by statute) if it is of a type commonly relied upon by reasonably prudent men in the conduct of their affairs.

A report by the National Research Council of the National Academies of Science such as this, produced by a committee of experts in this field, is the type of evidence that is commonly relied upon by reasonably prudent people in the conduct of their affairs.

The Beyea Report and VPIRG Request ¶¶ 10-13. If Dr. Beyeaôs report or any of VPIRG request paragraphs 10-13 do not qualify for judicial notice under V.R.E. 201, they qualify under the second sentence of § 801(4). These facts are ñgenerally recognized technical or scientific facts within the agency's specialized knowledge.ò As with the NAS Public Report, the Public Service Board and its expert staff possess knowledge of the economic (and noneconomic) life-cycle costs of power generation, and the Board and its staff are knowledgeable about this aspect of the potential costs of nuclear power generation. If any of paragraphs 10-13 do not meet the standards of § 810(4), they meet the standards of the third sentence of §801(1). The report is authored by one of the authors of the studies that the National Research Council of the National Academies of Science relied upon in its report. According to Dr. Beyeaôs Curriculum Vitae, he o has been the Chairman of the technical committee of the National Research Council committee on this subject, he serves as a Division Advisor to a branch of the National Academies of Science, and he personally briefed the National Research Council committee studying the risks of a spent fuel pool fire. His conservative analysis is the type of evidence that is commonly

[4] As with judicial notice, administrative notice bypasses all of the usual courtroom evidence rules. McCormick on Evidence, supra, § 352.

relied upon by reasonably prudent people in the conduct of their affairs.

VPIRG Request ¶¶14-15. Paragraph 14 asserts that the economic cost of a spent fuel pool loss of coolant could be hundreds of billions of dollars. Paragraph 15 asserts that the distribution of this economic cost among Vermont and its neighboring states and provinces would vary depending upon the details of the event, including the weather. Both general statements are beyond reasonable dispute and are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. Compare Powers v. Trustees of Caledonia County Grammar School, 93 Vt. 220, 106 A.836 (1919) (court may take judicial notice of economic and commercial history).

These facts are also ñgenerally recognized technical or scientific facts within the agency's specialized knowledgeò and are the type of evidence that is commonly relied upon by reasonably prudent people in the conduct of their affairs.

In addition, these two paragraphs qualify as ñlegislative facts.ò The process for taking notice of ñlegislative factsò differs from the process for taking notice of adjudicative facts. Legislative facts are ñthose more general propositions relied upon by a court in determining the existence or scope of a rule of law.ò Reporterôs Notes, Vermont Rule of Evidence 201. The tribunal can take notice of these ñunrestricted by the rules.ò *Ibid.* Legislative facts involve ñsociological, economic, political and moral doctrineò that the tribunal finds useful in rendering a decision. McCormick, Evidence, *supra,* § 331 at pp. 929-930. For example, in the Brown v. Board of Education decision, the Supreme Court found that ñthe very act of segregating branded certain children with a feeling of inferiority so deleterious that it would be impossible for them to obtain an equal educationé ò *Ibid*, at p.929. Similarly, the Board should find that the economic cost of a spent-fuel-pool loss of coolant would be hundreds of billions of dollars, and would be

distributed among Vermont and its neighbors in a manner dependent upon the facts of the incident, including weather.

1.C. Proposed Findings on Risk of Harm from Loss of Coolant

1. No witness, other than David Lamont, testified about the risk of harm from loss of coolant at the spent fuel pool. Lamont, 6/3/09 Tr.p.15 lines1-14.

2. The economic losses that could arise from loss of coolant at the spent fuel pool could be huge. Lamont, 6/3/09 Tr. p.12, lines 6-13.

1.D. Proposed Findings on VPIRG Notice Request

3. On May 29, 2009, VPIRG filed a written request that the Board take notice of certain facts. The request reads as follows:

The Vermont Public Interest Research Group hereby asks the Board to take notice of the following facts, pursuant to Board Rule 2.216, 3 V.S.A. § 810(1) and 3 V.S.A. § 810(4) and Vermont Rule of Evidence 201:

1. *In 2004, the National Research Council of the National Academies of Sciences was asked, pursuant to statute, by the United States Congress, to provide independent scientific and technical advice on the safety and security of commercial spent nuclear fuel pools in the United States. The Congress asked the National Research Council to provide both a classified report and an unclassified report. (See NAS Public Report pp.1, 3.)*

2. *The classified and unclassified reports were completed, and the unclassified report is publicly available at the National Academies of Science website. A paper copy is attached to this request. It is titled 'Safety and Security of Commercial Spent Nuclear Fuel Storage; Public Report." (The report is referred to in this request as "NAS Public Report.") It is copyrighted 2005 by the National Academies of Science.*

3. *The NAS Public Report concluded, in Finding 2A (page 36) that the probability of terrorist attacks on a spent fuel storage cannot be assessed quantitatively or comparatively. However, it found that "Terrorists view nuclear power facilities as desirable targets… The Committee believes that knowledgeable terrorists might choose to attack spent fuel pools because: (1) at U.S. commercial power plants, these pools are less well protected structurally than reactor cores; and (2) they typically contain inventories of medium- and long-lived radionuclides that are several times greater than those contained in individual reactor cores."*

4. *The Nuclear Regulatory Commission's own studies of the safety of spent fuel storage have concluded that loss of coolant would trigger a zirconium cladding fire. (NAS Public Report p.42.)*

5. *After September 11, 2001, studies published by Alvarez, Beyea and other experts outside the Nuclear Regulatory Commission concluded that a terrorist attack on a spent fuel storage pool could release between 10 percent and 100 percent of the cesium-137 in the spent fuel, with contamination consequences "worse than those from the Chernobyl incident." The economic consequences were estimated to include "loss of tens of thousands of square kilometers of land and economic losses in the hundreds of billions of dollars." (NAS Public Report p.43.)*

6. *The Nuclear Regulatory Commission's position is that these reports do not justify reconfiguring the storage of spent fuel within the pools or the movement of 1/3 of the fuel pool inventory into dry cask storage (as advocated by Alvarez and Beyea). (NAS Public Report p.46.)*

7. *However, the Nuclear Regulatory Commission does not disagree with Alvarez and Beyea's conclusion that a breach could lead to "release of fission products comparable to molten fuel in the reactor core." (NAS Public Report p.46.) That is, the Commission agrees that a release could be comparable to that from the Chernobyl accident.*

8. *The NAS committee's Public Report concludes that breaches in a spent fuel pool that result in a zirconium cladding fire would be "extraordinarily expensive" to clean up, and "even after cleanup was completed, large areas downwind of the site might remain contaminated to levels that prevented reoccupation." (NAS Public Report p.69.)*

9. *The NAS committee's Public Report is a reliable source of information upon which to base findings about the economic cost of loss of coolant at the Vermont Yankee spent fuel pool.*

10. *As part of a rulemaking petition submitted to the Nuclear Regulatory Commission by the Attorney General of Massachusetts in 2006, Beyea provided additional, more specific analyses of the economic losses that would result from a loss of coolant specifically at Vermont Yankee Nuclear Plant (and at Pilgrim Nuclear Plant). Dr. Beyea's report is attached, along with a copy of his sworn Declaration and his CV. The report is titled <u>Report to the Massachusetts Attorney General on the Potential Consequences of a Spent-Fuel Pool Fire at the Pilgrim or Vermont Yankee Nuclear Plant</u> (Jan Beyea, Ph.D., 2006).*

11. *Dr. Beyea's report finds that the economic losses are in the range of over $167 billion to $245 billion, were a 10% release of cesium-137 to occur at Vermont Yankee due to loss of coolant. (Beyea report p.17)*

12. *Dr. Beyea's report finds that the economic losses are in the range of over $723 billion to $878 billion, were a 100% release of cesium-137 to occur at Vermont Yankee due to loss of coolant. (Beyea report p.18)*

13. *The Beyea report is a reliable source of information upon which to base findings about the economic cost of loss of coolant at the Vermont Yankee spent fuel pool.*

14. *It is generally recognized within the field of regulated utilities, and it is within this Board's specialized knowledge, that a loss-of-coolant event at Vermont Yankee could result in hundreds of billions of dollars of economic losses.*

15. *It is generally recognized within the field of regulated utilities, and it is within this Board's specialized knowledge, that the actual distribution of the economic losses within Vermont, New Hampshire, Massachusetts, Maine and Canada would depend on the particular details of the loss-of-coolant event, including weather conditions.*

4. ENVY has objected to this request.

5. The Board accepts as an authenticated or self-authenticated document under V.R.E. 901 and 902(5) the 2005 NAS report entitled Safety and Security of Commercial Spent Nuclear Fuel Storage; Public Report, VPIRG Lamont cross Exhibit 1. No party has alleged that the copy submitted is an inaccurate version. The report is available at the NAS website for confirmation. The NAS National Research Council acts on behalf of and reports to the United States Congress. The report is a hearsay exception under V.R.E. 803(8).

6. The Board also takes judicial notice and administrative notice pursuant to V.R.E. 201 and 3 V.S.A. § 810 of the existence and contents of the 2005 NAS report entitled Safety and Security of Commercial Spent Nuclear Fuel Storage; Public Report. The publication of the report is a fact not subject to reasonable dispute that is capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. The National Academies of Science report was made at the request of the United States Congress, pursuant to a statute that authorizes reports to that agency. The report is available at the NAS website and was written by experts with access to classified information. It is a reliable source of information about the likelihood

and economic costs of loss of coolant at Vermont Yankee. The existence and contents of the report are ñgenerally recognized technical or scientific facts within the agency's specialized knowledge.ò The Public Service Board and its expert staff possess knowledge of the economic (and noneconomic) life-cycle costs of power generation and about this aspect of the potential costs of nuclear power generation. Based on this expertise, the Board finds that the NAS report is what it purports to be, and that its contents and paragraphs 1-9 of the VPIRG request are accurate. This is also the type of evidence that is commonly relied upon by reasonably prudent people in the conduct of their affairs.

7. No party has submitted reports, studies, testimony or other evidence contradicting the NAS reportôs findings.

8. Mr. Lamontôs testimony is consistent with the NAS reportsôfindings.

9. The Board accepts as reliable and accurate the findings of the NAS report, including the following:

9.1 The probability of terrorist attacks on a spent fuel storage cannot be assessed quantitatively or comparatively. However, terrorists view nuclear power facilities as desirable targets. Knowledgeable terrorists might choose to attack spent fuel pools because: (1) at U.S. commercial power plants, these pools are less well protected structurally than reactor cores; and (2) they typically contain inventories of medium- and long-lived radionuclides that are several times greater than those contained in individual reactor cores. (NAS Finding 2A, p. 36)

9.2 The Nuclear Regulatory Commissionôs own studies of the safety of spent fuel storage have concluded that loss of coolant would trigger a zirconium cladding fire. (NAS p.42.)

9.3 After September 11, 2001, studies published by Alvarez, Beyea and other experts outside the Nuclear Regulatory Commission concluded that a terrorist attack on a spent fuel storage pool could release between 10 percent and 100 percent of the cesium-137 in the spent fuel, with contamination consequences worse than those from the Chernobyl incident. The economic consequences were estimated to include loss of tens of thousands of square kilometers of land and economic losses in the hundreds of billions of dollars. The Board accepts these figures as reliable estimates. (NAS p.43.)

9.4. The Nuclear Regulatory Commissionôs position is that these reports do not justify reconfiguring the storage of spent fuel within the pools or the movement of 1/3 of the fuel pool

inventory into dry cask storage (as advocated by Alvarez and Beyea). (NAS p.46.)

9.5 However, the Nuclear Regulatory Commission does not disagree with Alvarez and Beyeaôs conclusion that a breach could lead to ñrelease of fission products comparable to molten fuel in the reactor core.ò (NAS Public Report p.46.) That is, the Commission agrees that a release could be comparable to that from the Chernobyl accident. The Board accepts as reliable the finding that breach of the spent fuel pool could lead to release of fissionable products comparable to molten fuel in the reactor core, as occurred at Chernobyl.

9.6 The NAS found that breaches in a spent fuel pool that result in a zirconium cladding fire would be extraordinarily expensive to clean up, and even after cleanup was completed, large areas downwind of the site might remain contaminated to levels that prevented reoccupation. (NAS p.69.) The Board accepts this finding as a reliable description of the cost and consequences of a zirconium cladding fire at the spent fuel pool.

10. The Board also takes judicial notice pursuant to V.R.E. 201 of the existence and contents of the Report to the Massachusetts Attorney General on the Potential Consequences of a Spent-Fuel Pool Fire at the Pilgrim or Vermont Yankee Nuclear Plant (Jan Beyea, Ph.D., 2006). The submission of the report to the Nuclear Regulatory Commission is a fact not subject to reasonable dispute that is capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. The report is based on very conservative assumptions about economic costs, such as the assumption that properties contaminated by radiation will lose only 5% of their value. (Beyea report p.23). Its findings are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. Each source is noted and set forth in the footnotes. It is a reliable source of information about the likelihood and economic costs of loss of coolant at Vermont Yankee.

11. The Board also takes administrative notice of Dr. Beyeaôs report pursuant to 3 V.S.A. § 810. The facts he presents are ñgenerally recognized technical or scientific facts within the agency's specialized knowledge.ò As with the NAS Public Report, the Public Service Board and its expert staff possess knowledge of the economic (and noneconomic) life-

cycle costs of power generation, and the Board and its staff are knowledgeable about this aspect of the potential costs of nuclear power generation. The report is authored by one of the authors of the studies that the National Research Council of the National Academies of Science relied upon in its report. He also has been the Chairman of the technical committee of the National Research Council committee on this subject, he serves as a Division Advisor to a branch of the National Academies of Science, and he personally briefed the National Research Council committee studying the risks of a spent fuel pool fire. His conservative analysis is the type of evidence that is commonly relied upon by reasonably prudent people in the conduct of their affairs.

12. No party has submitted reports, studies, testimony or other evidence contradicting Dr. Beyeaôs report.

13. Mr. Lamontôs testimony is consistent with Dr. Beyeaôs findings.

14. The Board accepts as reliable and accurate the findings of the Beyea report, including the following:

14.1. The economic losses are in the range of over $167 billion to $245 billion, were a 10% release of cesium-137 to occur at Vermont Yankee due to loss of coolant. (Beyea report p.17)

14.2 The economic losses are in the range of over $723 billion to $878 billion, were a 100% release of cesium-137 to occur at Vermont Yankee due to loss of coolant. (Beyea report p.18)

15. The economic cost of a spent fuel pool loss of coolant could be hundreds of billions of dollars.

16. The distribution of this economic cost among Vermont and its neighboring states and provinces would vary depending upon the details of the event, including the weather.

1.E. Findings on VY Spent Fuel Pool and Loss of Coolant

17. Most spent fuel pools are below-ground. Mullett PFT 11/14/08 p.7. The spent fuel pool at Vermont Yankee is suspended, above the foundation, on the second floor. Vanags, 7/2/09 tr.182. Thus the spent fuel pool at Vernon is different from, and more vulnerable than, most spent fuel pools.

18. If a spent fuel rod were dropped by a crane and it penetrated the floor of the pool, the consequences ñwouldnôt be good.ò The loss of coolant could cause the zirconium cladding to ignite. Vanags, 7/2/09 tr.176-185.

19. The loss of coolant and the resulting ignition of the zirconium cladding is the scenario that the NAS study and Beyea study examined, and which they found could cause hundreds of billions of dollars in damage.

20. The Departmentôs nuclear engineer, Mr. Vanags, states that an analysis of the potential for this type of accident at Vermont Yankee has been performed. However, he has never seen this study. Vanags, 7/2/09 tr.177.

21. Mr. Vanagsô testimony about this study has not been contradicted by any witness from the Petitioner.

22. Necessarily, the Petitioner possesses or has access to this study.

23. The Petitioner has not submitted this study in evidence in this proceeding.

24. Under federal law, the total liability for damages from an accident at the Vermont Yankee facility is capped at $560 million. 42 U.S.C. § 2210.

1.F. Conclusions on Risk of Harm from Spent Fuel Pool Coolant Loss

If a loss of coolant at the spent fuel pool were to occur, either by sabotage or by accident, the consequences would be horrendous. This would be Americaôs own Chernobyl. The economic costs to Vermont could be huge. The damages could be hundreds of billions of

dollars. By comparison, the Vermont General Fund for 2010 is predicted to be about one and a quarter billion dollars and the Governorôs proposed total state budget for 2010 is under 5 billion dollars.[5] The total liability of ENVY is limited to $560 million pursuant to 42 U.S.C. § 2210.

If there were ever a low probability/high significance event that required analysis as part of any Public Service Board Petitionerôs burden of proof, this is that event[6]. It is impossible for the Board to determine if the continued operation of VY promotes the general good of the state without detailed, site-specific analysis of the likelihood and economic consequences of a loss-of-coolant event at Vermont Yankee. Only then will the Board be in a position to weigh the benefits of continued operation against the costs, consistent with the allocation of jurisdiction set forth in Pacific Gas & Electric[7].

Few Vermonters have not heard that ENVY and nuclear power in general are ñsafe, clean and reliable.ò But this is a myth. The NAS and Beyea reports are the reality.

> One survey of major energy accidents from 1907 to 2007 found that nuclear plants ranked first in economic cost among all energy accidents, accounting for 41% of all accident related property damage, or $16.6 billion in property loss, even though nuclear power plants did not even begin commercial operation until the 1950s. These numbers translate to more than one incident and $332 million in damages every year for the past three decades. Forty-three accidents have occurred since the Chernobyl disaster in 1986, and almost two-thirds of all nuclear accidents have occurred in the U.S., refuting the notion that severe accidents are related to the past or to countries without Americaôs modern technologies or industry oversight. Even the most conservative estimates find that nuclear power accidents have killed 4100 people, or more people than have died in commercial U.S. airline accidents since 1982.

Christopher Cooper & Benjamin K. Sovacool, *Nuclear Nonsense: Why Nuclear Power is No*

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[5] http://finance.vermont.gov/sites/finance/files/pdf/state%20budget/ExecutiveBudgetRecommendSumFY2010.pdf

[6] Docket No. 5270-CV-4, Re: Least Cost Investment, Energy Efficiency, Conservation and Management of Demand for Energy (3/24/94), *supra.*

[7] ñé because the NRC's regulations are aimed at insuring that plants are safe, not necessarily that they are economical, § 25524.2 does not interfere with the objective of the federal regulation.ò 461 U.S. at 218.

Answer to Climate Change and the World's Post-Kyoto Energy Challenges, 33 WM. & MARY ENVTL. L. & POLÕY REV. 1, 66 (2008).

The Ninth Circuit Court of Appeals decision in San Luis Obispo Mothers for Peace v. N.R.C., 449 F.3d 1016, 62 ERC 1801, 36 Envtl. L. Rep. 20,101 (2006) may provide some guidance to the Board. The Court of Appeals barred construction of a spent fuel storage facility in Diablo Canyon unless and until the N.R.C. performed environmental review under the National Environmental Policy Act (NEPA) of a potential terrorist strike on the facility. Using language that echoes this Boardôs precedents, the Court rejected the N.R.C.ôs claim that this risk was not quantifiable. The Court held that it is ñpossible to conduct a low probability-high consequence analysis without quantifying the precise probability of risk.ò 449 F.3d 1031-32. The Court then quoted the N.R.C.ôs own regulations on risk assessment:

> In addressing potential accident initiators (including earthquakes, sabotage, and multiple human errors) where empirical data are limited and *residual uncertainty is large,* the use of conceptual modeling and scenario assumptions in Safety Analysis Reports will be helpful. They should be based on *the best qualified judgments of experts,* either in the form of subjective numerical probability estimates *or qualitative assessments of initiating events and casual [sic] linkages in accident sequences*[8].

[Emphasis in the original.] That is the type of information that, except for the NAS and Beyea reports, is completely absent from the record of this case. There is no evidence addressing the questions set forth on pages 1 and 2 of this memorandum, qualitatively or quantitatively. The NAS and Beyea reports suffice to frame the issue and help the Board focus on the type of

[8] The Court concluded, as to this issue: ñNo provision of NEPA, or any other authority cited by the Commission, allows the NRC to eliminate a possible environmental consequence from analysis by labeling the risk as óunquantifiable.ô If the risk of a terrorist attack is not insignificant, then NEPA obligates the NRC to take a óhard lookô at the environmental consequences of that risk. The NRC's actions in other contexts reveal that the agency does not view the risk of terrorist attacks to be insignificant. Precise quantification is therefore beside the point.ò

evidence that is needed; they do not suffice to meet ENVYôs burden of proof. Based on the limited record that does exist -- possible damages eight hundred times larger than the stateôs General Fund for 2010, and fifteen hundred times larger than ENVYôs liability limit -- the Petitioner has not met its burden of proof.

2. The 9 Standards Requested by the Department as Necessary to Protect Vermont Interests During Operation and Decommissioning

2.A. Findings as to the 9 Standards

25. The Department requests that nine substantive conditions be imposed on any approval in order to protect Vermont interests. The Departmentôs view is that each one of these nine conditions is indispensable. They ñmustò each be included in any CPG if the continued operation of the facility will serve the public good. Vanags, 6/2/09 tr. pp.163-164, Vanags PFT 2/11/09 pp.7-22.

26. These standards are:

1) Decommissioning must return the site to ñgreenfieldò condition, which may cost ENVY an additional $100 million (Vanags PFT 2/11/09 p.9).

2) Decommissioning radiation cleanup to a total exposure dose level of 10 mrem, rather than the N.R.C. standard of 25 mrem (Vanags PFT 2/11/09 p.10-12).

3) Decommissioning radiation cleanup to a drinking water dose level of 4 mrem, rather than the N.R.C. standard of 25 mrem (Vanags PFT 2/11/09 p.10-12).

4) Prohibition of rubblization, which is allowed by the N.R.C. (Vanags PFT 2/11/09 p.9-14).

5) Removal of spent fuel must be as expeditious as is commercially reasonable (Vanags PFT 2/11/09 p.15).

6) The spent fuel pool must be managed so as to leave room at all times for evacuation of the reactor core (Vanags PFT 2/11/09 p.16).

7) Should the plant be shut down prior to March 21, 2032, decommissioning will commence no later than that date. (Vanags PFT 2/11/09 p.16)

8) At the end of decommissioning, as certified by the State of Vermont (and not just the N.R.C.), there will be a 55/45 split of any excess trust funds between GMP and CVPS (55%) and ENVY (45%). (Vanags PFT 2/11/09 p.16)

9) ENVY must comply with Vermont Department of Health radiation standards at the site boundary, during operation and decommissioning. (Vagans PFT 2/11/09 p.19)

In addition, the Department seeks reiteration of the conditions imposed in Docket 7082 regarding the ISFSI (Vagans PFT 2/11/09 p.20-21)

2.B. Conclusion of Law -- The 9 Standards Requested by the Department as Necessary to Protect Vermont Interests During Operation and Decommissioning Will Be Unenforceable. The Board Should Reject Reliance Upon Them in Favor of Economic Analysis under PG&E

These conditions will be unenforceable when needed, for two reasons. The first reason applies to the 8 standards pertaining to decommissioning (all of the standards except number 6, above, pertaining to evacuation of the reactor core). This reason requires consideration of how the Board will enforce them, which the Board has already explained. In In re: Vermont Yankee Nuclear Power Corporation, Docket No. 6545, Order dated 1/13/02, the Board explained that its authority to regulate the VY facility, both before and after the sale to Entergy, was and is quite limited.

> Several parties expressed concern that the sale of Vermont Yankee would greatly reduce, if not eliminate, the Board's and the state's ability to regulate operations at Vermont Yankee. As expressed by NECNP, ôthe loss of local control is the central theme that permeates every other issue in this case.ó
>
> The term ólocal controlóis clearly a misnomer if it is meant to describe

> either the current situation, or the one that would exist if we rejected the proposed transactions. A far more appropriate term would be õVermont influence.ó In that context, the reductions in the Board's authority are not large and are partially offset by several enhancements in the MOU. The Board's direct control of VYNPC at the present time is limitedé
>
> We turn first to the Board's ability to directly regulate VYNPC. Contrary to NECNP's assertions, the sale has no effect on the Board's direct authority. At the present time, the Board has limited direct regulation of VYNPC (as opposed to its Vermont owners). The Board's primary authority to directly regulate VYNPC is through the Certificate issued under Title 30. VYNPC now holds a Certificate authorizing the company to manufacture, transmit and sell the capacity and associated energy of Vermont Yankee within and outside of Vermont. This Certificate will remain in effect following the sale (as VYNPC will still sell energy under the Amendatory Agreements). As part of this proceeding, the Board will issue a similar Certificate to ENVY and ENO under Section 231. The Board has the authority under Section 231(a) of Title 30 to amend or revoke any Certificate for good cause. Thus, if the Board were to find upon a compelling record that any owner's ownership of Vermont Yankee no longer promoted the general good, the Board could revoke the Certificate, regardless of whether it was held by ENVY or VYNPC.

The bottom line is that the sole means available to the Board for regulating ENVYõs conduct is the threat of revoking ENVYõs CPG under § 231. Revocation would terminate ENVYõs ability to sell power and earn money for its owners. If and when ENVY or its owners or creditors decide it is in their interest to ignore or violate these Vermont-imposed decommissioning standards, for example to avoid spending $100 million to obtain ñgreenfieldò conditions, that decision will come after the plant has ceased generating power. At that point, ENVY will only be spending money, not earning any money. The threat of shutting off its stream of earnings will be ineffectual, at best.

The threat to revoke the CPG will be worse than ineffectual, as it is a threat the Board can ill afford to make. Revocation of ENVYõs authority to conduct business as a nuclear plant operator would jeopardize all of the contracts ENVY will have entered into to perform decommissioning. Once ENVY has lost its authority to act as the operator of the facility,it is unknown who would step into ENVYõs shoes to carry out decommissioning. Would *any* entity

have this authority? Will the ñparentò company be granted a CPG to do the work? Could the ñparentò be compelled to accept a CPG to perform decommissioning? The Board would be navigating uncharted, reef-strewn waters, were it to revoke a nuclear plantôs operating authority once the plant has ceased generating power and is commencing or implementing its decommissioning obligations. It is difficult to imagine the extent of the uncertainty, anxiety and cost this scenario would impose on the Board, the Department, Windham County and the state.

Assuming that some other entity does decide to step into ENVYôs shoes after ENVYôs CPG has been revoked, the same problems would resurface. After all, if the only penalty for failing to abide by the Vermont-imposed conditions is revocation of the CPG, and the new entity does not have a CPG to begin with or has no reason to fear losing its CPG, what incentive would it have to spend one hundred million dollars on greenfield restoration (or other requirements) when the N.R.C. says it does not need to? Arguably, its own shareholders will be harmed were it to comply with these conditions. At best, ENVYôs successor would be in a position to negotiate away some or all of these conditions before committing itself to step into ENVYôs shoes.

The second reason is preemption. The Atomic Energy Act or the Federal Power Act either arguably or probably preempts each of the nine conditions that the Department believes is indispensable to serving the public good.

1) *Decommissioning must return the site to "greenfield" condition, which may cost ENVY an additional $100 million.* Because the decommissioning site includes areas of radiologic contamination within N.R.C. jurisdiction, the state can exercise no jurisdiction whatsoever over decommissioning this site, even to address non-radiological issues, according to the U.S. District Court in State of Missouri v. Westinghouse Electric, LLC, 487 F.Supp.2d 1076 (E.D. Mo. 2007). On this basis, the District Court refused to accept the consent decree agreed to

by Westinghouse and ruled that the consent decree was unconstitutional ï despite having no objection from any party or any intervenor. On the other hand, in Maine Yankee Atomic Power Corp. v. Bonsey, 107 F.Supp.2d 47, 50 ERC 1725 (D. Me. 2000) the court broadly construed federal preemption to include all issues pertaining to spent fuel storage during decommissioning but reserved to the state the right to address clearly non-radiological issues such as ñaesthetic landscaping requirementsò[9]. The Connecticut Supreme Court has agreed with the Maine Yankee ruling. Connecticut Coalition Against Millstone v. Connecticut Siting Council, 286 Conn. 57, 942 A.2d 345, 359 (2008) (ñAccordingly, with respect to environmental concerns, we conclude that the council's jurisdiction is limited to *nonnuclear* environmental effects.ò)

If ñgreenfieldò status is based on the aesthetic impact of decommissioning or on protecting the stateôs economic interests, rather than safety, it may be lawful. See In re Entergy Nuclear Vermont Yankee, LLC, Docket 7082 (4/26/06), upholding the Vermont statute governing financial assurances for spent fuel storage and distinguishing Maine Yankee on the basis that Maine Yankee did not address the economic interests of the state, which Pacific Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 103 S.Ct. 1713, 75 L.Ed.2d 752 (1983) reserved to state regulation. However, notwithstanding Pacific Gas & Electric, even purely economic state interests in this area may be subject to preemption under the Federal Power Act (as opposed to the Atomic Energy Act). ENVY has already argued that future disposition of the trust fund is completely preempted and outside the jurisdiction of this Board under the Federal Power Act. In responding to the Boardôs order compelling return of excess funds in the sale case, ENVY argued that the Boardôs proposed conditions governing decommissioning invaded the exclusive jurisdiction of F.E.R.C. The decommissioning trust was

[9] ñDefendants may, however, insist that the ISFSI comply with state requirements that do not impermissibly infringe on radiological, operational, construction, or safety issues, such as, for example, aesthetic landscaping requirements, or flood or soil erosion control measures.ò

funded through wholesale rates approved of by F.E.R.C., not rates set by the Board. In re: Vermont Yankee Nuclear Power Corporation, Docket No. 6545 Ruling On Motions to Alter or Amend dated July 11, 2002, Part II. The Board concluded, however, that ENVY would be waiving preemption arguments so long as acceptance of P.S.B. jurisdiction was made a condition of the C.P.G. and ENVY accepted the C.P.G. (As discussed below, that waiver is likely to be unenforceable against third parties and even against ENVY, under United States Supreme Court precedent.)

2) *Decommissioning radiation cleanup to a total exposure dose level of 10 mrem, rather than the N.R.C. standard of 25 mrem*. Under the analysis of Pacific Gas & Electric, Westinghouse, Maine Yankee and Connecticut Coalition, this area may be preempted. The Maine Yankee, Westinghouse and Connecticut Coalition decisions all appear to agree that regardless of whether the intent of the state is to address a non-safety issue, radiological standards are preempted under Pacific Gas & Electric. ENVY has refused to commit to the 10 mrem standard and has set forth its position that this may be preempted. Thayer, 5/20/09 Tr. p.73

3) *Decommissioning radiation cleanup to a drinking water dose level of 4 mrem, rather than the N.R.C. standard of 25 mrem.* Again, under the analysis of Pacific Gas & Electric, Westinghouse, Maine Yankee and Connecticut Coalition, this area may be preempted. It seems unlikely a court would find that this radiological standard is based on non-radiological or state economic interests.

4) *Prohibition of rubblization, which is allowed by the N.R.C.* Under the analysis of Maine Yankee and Connecticut Coalition, this non-radiological standard may be enforceable because land use standards, not radiological standards, are to be enforced. Under Westinghouse, however, the condition may be preempted.

5) *Removal of spent fuel must be as expeditious as is commercially reasonable.* Unless the court finds the motivation to be economic, not based on safety concerns, this standard may be struck down. See Pacific Gas & Electric at 215, 223-224.

6) *The spent fuel pool must be managed so as to leave room at all times for evacuation of the reactor core*. If the court finds the motivation to be based on safety concerns, this standard may be struck down. Pacific Gas & Electric 461 U.S. at 215, 223-224. However, even if the motivation is economic, if the court finds that this clause pertains to the ñoperationò of the facility, it is likely to be struck down. Pacific Gas & Electric 461 U.S. at 212[10].

7) *Should the plant be shut down prior to March 21, 2032, decommissioning will commence no later than that date*. If the court were to find that the motivation is economic, this may be sustained.

8) *At the end of decommissioning, as certified by the State of Vermont (and not just the N.R.C.), there will be a 55/45 split of any excess trust funds between GMP and CVPS (55%) and ENVY (45%).* Since this clause hinges on state certification that decommissioning has been complete, and certification of completion will depend on satisfaction of standards 1-4, the constitutionality of this provision will depend on the constitutionality of standards 1-4. This condition continues to remain vulnerable to preemption analysis under the Federal Power Act as well, for the reasons ENVY asserted in the sale case, Docket 6545.

9) *ENVY must comply with Vermont Department of Health radiation standards at the site boundary, during operation and decommissioning.* Again, under the analysis of Westinghouse, Maine Yankee and Connecticut Coalition, this area may be preempted. It seems unlikely a court

[10] ñAt the outset, we emphasize that the statute does not seek to regulate the construction or operation of a nuclear powerplant. It would clearly be impermissible for California to attempt to do so, for such regulation, even if enacted out of non-safety concerns, would nevertheless directly conflict with the NRC's exclusive authority over plant construction and operation.ò

would find that this radiological standard is based on non-radiological or state economic interests.

ENVYôs past or future waiver of federal preemption and acceptance of these conditions should provide no comfort. Any waiver is unenforceable. First, were ENVY to violate that commitment and defend its actions on the grounds that the Board was without jurisdiction to impose them, the Board would have no remedy other than revoking ENVYôs CPG. As a practical matter, this may not cause ENVY much concern.

Legally, the waiver is likely to be deemed unenforceable in court. If the NRC or FERC properly had exclusive jurisdiction over the preempted issue (e.g., a radiation standard or disposition of decommissioning trust funds), and if the standard properly could have been ordered only by the federal agency in a proceeding before that agency, the courts are obligated to ignore ENVYôs waiver of the preemption issue. International Longshoremenôs Assoc. v. Davis, 476 U.S. 380, 392-93, 106 S.Ct. 1904, 90 L.Ed.2d 289 (1986). This is essentially what occurred in Westinghouse; the court recognized and addressed the preemption issue *sua sponte* and rejected the settlement Westinghouse had voluntarily contracted itself to accept. Thus, if there were to be a CPG revocation or any other sanction imposed on ENVY based on noncompliance with a ñwaivedò preempted standard, the CPG revocation or other sanction is likely to be reversed in court. It would not be prudent for the Board to rely on the waiver.

Since 45% of excess decommissioning funds would be returned to ENVY, ENVYôs creditors also will have an interest in reducing decommissioning costs by challenging these conditions. They may challenge the eight decommissioning conditions by bringing a declaratory judgment action in court or a rulemaking petition or other proceeding before the N.R.C. If ENVY lacks sufficient funds both to meet its decommissioning obligations and to pay its other

bills, its creditors may have powerful incentives to seek this relief. They may also find it in their interest to file for relief in the bankruptcy court. Re: Green Mountain Power, Docket No. 6107 (1/23/01), 207 P.U.R.4th 1, findings 62-70 and ensuing ñDiscussionò (noting that ñGMPôs creditors have the right to seek to place the company in bankruptcy.ò) The bankruptcy court will then exercise its judgment as to whether these 8 decommissioning standards are preempted. In all such claims brought by creditors or a bankruptcy trustee, it will be irrelevant that ENVY waived a preemption challenge to a state-imposed standard.

VPIRGôs position is this. The Department argues that without each one of these protections in place, the Petition does not satisfy the public good standard. Although VPIRG appreciates the Departmentôs intent and effort, it submits that these conditions are unlikely to be honored and will not be effectual in protecting the public interest. Instead of relying upon such thin reeds, the Board should examine the costs and benefits of continued operation strictly within the confines of Pacific Gas & Electric:

> The Court of Appeals is right, however, that the promotion of nuclear power is not to be accomplished ñat all costs.ò The elaborate licensing and safety provisions and the continued preservation of state regulation in traditional areas belie that. Moreover, Congress has allowed the States to determine-as a matter of economics-whether a nuclear plant vis-a-vis a fossil fuel plant should be built. The decision of California to exercise that authority does not, in itself, constitute a basis for preemption. Therefore, while the argument of petitioners and the United States has considerable force, **the legal reality remains that Congress has left sufficient authority in the states to allow the development of nuclear power to be slowed or even stopped for economic reasons.**

461 U.S. at 222-223 (emphasis added). Solid economic reasons support discontinuing the operation of this facility. They include the huge potential costs to the state from a spent fuel pool incident (discussed above), the lack of any PPA (discussed next), the mounting cost of spent fuel storage over the next 20 years as more and more spent fuel accumulates and which Vermont taxpayers may end up having to pay for (discussed below), and the chill that continued nuclear

operation will cast over alternative sources of energy that lack the economic risks associated with nuclear power (also discussed below).

3.Power Purchase Agreement Issues

3.A. Findings as to Power Purchase Agreement

27. ENVY has not entered into any new Power Purchase Agreement with any Vermont utility. Lamont PFT 2/11/09 pp.8-10.

28. Without such an agreement, it is impossible to ascertain if there will be an economic benefit to Vermont. The other potential benefits, such as the Revenue Sharing Agreement, are too uncertain. Lamont PFT 2/11/09 pp.11-17

3.B. Conclusions as to Power Purchase Agreement

30 V.S.A. § 248(b)(4) requires a finding that the proposal ñwill result in an economic benefit to the state and its residents.ò This differs from a requirement that the proposal not cause undue harm. An affirmative finding of economic *benefit* is required. Economic benefit can also be one of the principal counterweights to environmental harm, resulting in a finding that impacts are not undue.

In the recent Deerfield Wind decision, Docket No.7250, the Board issued a § 248 CPG to the project applicant in the absence of a PPA, but with the condition that the developer enter into an agreement to sell at least 30% of the projectôs 30 MW output to Vermont utilities at favorable prices. The 15 turbines will impact 35 acres of high quality habitat for black bear. The decision awaits ruling on post-judgment motions. Board Member Burke dissented, based on the impact on bear habitat and the absence of a PPA with known benefits that could justify the impact on habitat.

Regardless of whether the majority or dissent in Deerfield Wind was correct about

whether to permit 15 wind turbines in the absence of a PPA, the present case requires a different balancing. This case involves continued operation of a nuclear power plant and its spent fuel pool without a PPA, and with no solution for the potentially costly problem of disposing of another 20 years of spent fuel. No matter what goes wrong with Deerfield Wind, there will be no ñextraordinarily expensiveò remediation needed, no areas that may become uninhabitable, no threat to the economic vitality of any town, school district, county or state and no accumulation of nuclear waste with no place to store it.

The Vermont Supreme Courtôs ruling in the Vermont Yankee sale case addressed the New England Coalitionôs argument that when the PPA adopted at that time expires the plant could end up selling100% of its output outside Vermont, with little economic benefit remaining in-state. The Court rejected this argument. It did so because the PPA that was in effect provided 55% of the plantôs output to Vermont and the Court found that it would be ñspeculativeò to imagine continued operation of VY without any PPA[11]. In re Proposed Sale of Vermont Yankee Nuclear Power Plant, 175 Vt. 368, 372, 829 A.2d 1284, 2003 VT 53 ¶ 5. Obviously, the present case now falls within the once-speculative territory that was not before the Court in 2003. There is no PPA after 2012 and yet ENVY seeks permission to operate past 2012. Thus there is no basis for finding economic benefit.

The Court offered a second justification for rejecting NECôs argument. ñSecond,ò the Court wrote, ñeven if future events demonstrate that NEC's speculative concerns are well founded, NEC's assumption that no remedy exists is not. See *infra,* at ¶ 11.ò The discussion in ¶

[11] ñNEC assumes that the plant's new owners will withdraw from the power purchase agreement and would operate the plant after the expiration of the current license solely for the benefit of out-of-state customers. NEC's claim is, at this point, only hypothetical, and has no support in the PSB's findings. We will not render an opinion on a speculative claim that has no basis in the findings of the tribunal below.ò

11 reiterated the Boardôs explanation that it reserves the right to revoke ENVYôs CPG under § 231 and then the Court went beyond what the Board had written. In ¶ 11 the Court *connected the representations made to the Board – i.e., that 55% of the output would be sold to Vermonters – with revocation of the CPG.*

> é We note, however, that the PSB has authority under 30 V.S.A. § 102 and § 231 to amend or revoke a CPG for good cause. See 30 V.S.A. § 102(c) (ñFor good cause, after an opportunity for hearing, the board may amend or revoke any certificate awarded under the provisions of this section.ò); *id.* § 231 (same). Good cause to amend or revoke ENVY and ENO's CPGs might be found if the companies materially alter the circumstances they presented to the PSB as grounds for it to find that the sale and associated power purchase agreement promote the general good of Vermonté

Therefore it is critical that the Board in the present case again obtain a commitment from ENVY that it will provide a majority of its output to Vermonters. If, in this 2009 § 248 case, ENVY no longer asserts it will provide a majority of its output to Vermont, and if the Board approves of the Petition nonetheless, the Board will no longer be able to argue that ENVYôs CPG or CPGs should be revoked because it has broken its word. It will have kept its word. Without such a commitment, in the future ENVY will be free to use Vermontôs air, water, fire protection, police protection, and emergency planning to generate nuclear power without selling a majority of that power to the Vermonters who own those resources and pay their taxes to support those services for ENVY.

4. 20 More Years of Spent Fuel On Site

4.A. Findings of Fact re 20 More Years of Spent Fuel

29. Continued operation means continued production of spent fuel. There is no solution in sight to the question of where to store spent fuel. Even if Yucca Mountain were to be opened to accept spent fuel, it would have room to accept spent fuel after 2020 only if its statutory limit on capacity is raised. Lester cross 5/18/09 Tr.12-17.

30. However, the Secretary of Energy has stated that Yucca Mountain is no longer being considered as an option. It is ñoff the table.ò Lester cross 5/18/09 Tr.48-50, 94-96.

31. No other repository has been located. By statute, there has been a prohibition on exploring any option other than Yucca Mountain as possible sites for storage of high-level nuclear waste. Lester cross 5/18/09 Tr. 94-96.

32. It is technically feasible to store high-level nuclear waste on-site for an indeterminate period, and the NRC may order that spent fuel remain on site in Vermon for an indefinite period of time in the future. Lester cross 5/18/09 Tr. 94-97; Thayer cross 5/21/09 Tr. p.p70-72..

33. An additional 20 casks of spent nuclear fuel would be generated during the period of the requested license extension. Mullett, 5/28/09 Tr. pp.66-69, 81-83, 86-88.

34. There is no precedent to rely upon in determining whether the Department of Energy will be required to pay the costs of storing the additional 20 casks of spent nuclear fuel that would arise from the requested license extension. A court could rule either way. Mullett, 5/28/09 Tr. pp.65-69, 81-83, 86-88

35. The cost of storage of this additional spent fuel is approximately $4 million per year. Mullett, 5/28/09 Tr. p.103.

36. Over the 20-year period of the license extension, this cost adds up to $80 million. However, the storage costs are likely to continue after the plant stops generating energy, at least until a site is located to store the spent fuel outside of Vermont.

37. ENVY commingles funds for spent fuel management with funds collected from ratepayers for decommissioning. Mullett 11/14/08 PFT p11.

38. ENVY has already requested permission from the N.R.C. permission to use funds from the decommissioning trust to pay for costs of spent fuel storage. Jacobs, May 28, 2009 Tr. p.13.

39. Any DOE funds paid to ENVY for past or future spent fuel management would be general assets of the company in bankruptcy, and thus available to ENVYøs creditors. Mullett, 5/28/09 Tr, p.52.

40. Therefore, after 2012, ENVY may seek to use funds from the decommissioning trust to pay for the cost of spent fuel storage if DOE does not do so.

41. The funds in the decommissioning trust (except to the extent ENVY adds to them, which it has not yet done) are all ratepayer funds. The Board has already held that it is important for policy reasons to return the share of any unused decommissioning trust funds contributed by Vermont ratepayers to Vermont ratepayers. In re: Vermont Yankee Nuclear Power Corporation, Docket No. 6545 Ruling On Motions to Alter or Amend dated July 11, 2002 .

42. The following testimony was given by the Departmentøs expert, Mr. Mullett.

> MR. YOUNG: Okay. Let me move to a different topic. Page 12 of the same testimony you discuss some possible effects of future bankruptcy. To your knowledge is there any scenario under which an ENVY bankruptcy could leave the State of Vermont or Vermont utilities with any costs or responsibility associated with either decommissioning or spent fuel management?
>
> MR. MULLETT: I think that's an unknown. I think that's an uncertainty at this point. In terms of saying is it conceivable that there could be a liability for which there was not a party determined to be liable in the Entergy or Enexus tier of -- one tier or another of that holding company, I think that is possible, yes.

Mullett, 5/28/09 Tr. pp.113-114.

44. Ratepayers or taxpayers may end up paying for the extra spent fuel management or decommissioning costs of 20 more years of operation. Mullett, 5/28/09 Tr. pp.113-114.

45. Mr. Mullett proposed segregating funds collected for spent fuel management and decommissioning in order to try to avoid these risks. Mullett 5/28/09 Tr. pp.114-115.

46. ENVY argued in 2002, in the sale case, that all matters pertaining to the decommissioning trust fund are preempted under federal law. These funds are collected pursuant to ENVYôs FERC-approved rate. In re: Vermont Yankee Nuclear Power Corporation, Docket No. 6545 Ruling On Motions to Alter or Amend dated July 11, 2002, Part II.

47. Since the NRC, not this Board, regulates spent fuel management and also determines whether decommissioning funds may be used for spent fuel management, and since ENVY has argued that FERC, not this Board, regulates how ENVY utilizes funds paid to it under its FERC-approved rate, any order issued by this Board pertaining how funds collected from ratepayers or from DOE for spent fuel management after 2012 are held, invested or spent may be challenged on the grounds that the order was outside this Boardôs jurisdiction. A court, not this Board, would ultimately decide all such questions.

48. Some or all of the costs of spent fuel management after 2012 may end up being borne by Vermont ratepayers or taxpayers.

4. B. Conclusions of Law re: Spent Fuel

Spent nuclear fuel is one of the most hazardous substances on earth. Mullett 11/14/08 PFT p. 6 (spent nuclear fuel is the most dangerous nuclear waste). It is expensive to safely store such lethal materials. The only evidence in the record is that the cost will be about $4 million a year for waste generated at VY after 2012. Since the one site selected by the federal government, Yucca Mountain, is not longer being considered, there is no place outside Vermont to store spent nuclear fuel permanently. Waste generated after 2012 could remain on-site indefinitely, with annual costs accruing at $4 million indefinitely, with no known source of funding to pay these

costs. The waste, and the annual cost, could be Vermontôs problem indefinitely, perhaps as long as the State of Vermont exists.

It is somewhat clear that the U.S. DOE is contractually committed to pay for the costs of storage of VY spent nuclear fuel generated up through 2012, although that dispute has not been resolved. For waste generated after 2012, however, little is known and nothing is reasonably certain. The DOE may or may not be liable for some or all of these costs. Should DOE not be liable, ENVY may try to pay these costs by resort to funds from the decommissioning trust ï funds which this Board has already ruled should be returned to ratepayers if excess for what is needed for decommissioning. Consequently, ratepayers or taxpayers may end up paying some or all of the costs.

The economic benefit and ñgeneral goodô standards of § 248 require weighing the potential benefits of extending ENVYôs license against the potential economic cost of the spent fuel storage that license extension will necessitate. (This analysis also requires a PPA.). ENVY has not provided sufficient information upon which to base a conclusion that relicensing meets either the economic benefit or general good standard.

5. Decommissioning Fund

5.A. Findings as To Decommissioning Fund

49. The decommissioning fund is underfunded. It is deficient in the amount of $120 million to meet NRC decommissioning standards. Chernick PFT 2/11/09 pp.5-21, 6/1/09 Tr pp.154-157.

50. If the fund continues to be underfunded, and ENVY or its successor become bankrupt during decommissioning, Vermont taxpayers or ratepayers may have to pay to complete decommissioning to NRC standards. Chernick PFT 2/11/09 pp.5-21.

51. Mr. Chernick did not address the cost of completing decommissioning to Vermont standards.

If ENVY or its successor were to become bankrupt during decommissioning, Vermont taxpayers or ratepayers may have to pay the costs of completing decommissioning to Vermont standards.

52. ENVYôs representative Mr. Thayer had the following dialogue with DPS Attorney Cotter:

> Q. Now I think Mr. Lamont clarified his testimony a little bit when he filed his surrebuttal to explain that his proposal did not necessarily require annual contributions every year, but whether or not they would be required would be based upon the periodic review. Do you understand that to be his clarified position?
>
> A. I understand that.
>
> Q. Does the company still object to that proposal?
>
> A. I guess I would have to say yes.
>
> Q. Okay. And just sort of a little detail thing here, you originally objected to a three-year review period for funding adequacy, setting aside whether or not contributions would be part of the mechanism. You objected to the three-year period because it was sort of out of step with the filing of decommissioning cost estimates on a five-year basis. Correct?
>
> A. That's correct.
>
> Q. And Mr. Lamont has suggested -- well let's move to a 2 point review -- funding adequacy review approximately every 2.5 years to be in step with those cost estimates. Does the company object to that?
>
> A. Yes, we do.
>
> Q. Okay. Is the issue underlying the company's objection the concept that if at a given point in time, for example, right now, where short term markets aren't looking too good, you know the decommissioning fund has been coming up lately, but it has gone through a down turn, so if we performed hypothetically an adequacy review right now, we would probably get a required payment. And yet at the next review it might show that the fund was going to be over funded at the end of the day, is that sort of the underlying problem?
>
> A. No. Not actually.
>
> Q. No?
>
> A. My problem is more of a process problem. In that the types of reviews that you just described for financial assurance are being performed by the Nuclear Regulatory Commission as we speak under federal regulations.

Q. So your objection then is -- is your objection based on the idea that the Board doesn't have the authority to implement a condition such as that recommended by Mr. Lamont?

A. I wouldn't use the word authority, I would just want the Board to know that the NRC has a process for an ongoing review of financial assurance and adequacy of the decommissioning fund. And has the power and authority to take action on any licensee that -- where the outcome is not acceptable.

Q. And what if the Board isn't comfortable with that process at the NRC? I mean do we just live with it, or can the Board do something else?

A. I don't presume to speak for the Board.

Q. Okay. If the Board were to adopt something similar to what Mr. Lamont has proposed, would Vermont Yankee consider a lawsuit to prevent such a condition from being implemented?

A. I'm not an attorney, and I can't comment on that --

Q. Okay.

A. -- today.

Q. I believe it was you, but certainly a Vermont Yankee official has stated publicly, for example, that if the legislation that was under consideration in the State House towards the end of the legislative term this spring became law, that Vermont Yankee would consider pursuing its options in court; is that correct?

A. What I said was that -- in front of the legislature, was if the legislature pursued that legislation requiring immediate funding of the decommissioning fund, the company would pursue a legal remedy.

Q. Okay.

A. Those were my words.

Q. And would the company pursue a legal remedy in the event the Board imposed a condition similar to what Mr. Lamont has proposed?

A. I don't know.

Thayer, 5/20/09 Tr.pp.78-81.

Thus, it is clear that ENVY objects to fully funding the Vermont Yankee decommissioning fund (even to NRC standards) and is willing to go to court to overturn any requirement by the General

Assembly that it do so. There is no reason to believe it would not seek to overturn any such requirement if imposed by this Board as a condition of license extension.

53. The day following Mr. Thayerôs discussion with Attorney Cotter, in response to questions from Chairman Volz, Mr. Thayer was more explicit. If the Board has concerns about the adequacy of funding the decommissioning trust, the NRC will decide the matter. The Boardôs role would be to go to the NRC and request that the NRC take action. Chairman Volz asked Mr. Thayer ñSo youôre saying we just need to rely on the NRC?ò Mr. Thayerôs response was not a yes or no, so the Chairman asked ñSo, the answer to my question is yes?ò Mr. Thayer then responded ñYes.ò 5/21/09 Tr. 51-53. On pages 54 and 55 he agreed that ENVYôs position is that the NRC has ñexclusiveò jurisdiction over the issue.

54. If ENVY were to fully funding the decommissioning trust, as urged by Mr. Chernick, ENVY would have the opportunity to include those costs in its wholesale rates going forward. These post- 2012 rates would more accurately reflect the costs of Vermont Yankeeôs power if these costs were included.

5.B. Intergenerational Equity

The doctrine of just and reasonable rates requires that those ratepayers who use an asset pay for it rather than shifting its costs to future generations of ratepayers who have not used the asset. Therefore decommissioning costs must be assessed and placed into rates while the plant is in operation. Connecticut Light & Power Co., 13 FERC ¶ 61,155 (Nov. 21, 1980) (ñWhatever methodology is selected, however, it is clear that the present generation of electric ratepayers should pay a fair share of the known but unquantifiable cost of nuclear plant decommissioning since the present generation benefits from the use of those plants.ò) The FERC Connecticut Light & Power decision about decommissioning costs is consistent with this Boardôs policy. In

In re C.V.P.S, Docket Nos. 6946 & 6988 Order dated 3/29/05, 241 P.U.R. 4th1 the Board wrote ñIntergenerational equity is of great concern to us.ò Because the allocation of costs should ñmatchò the allocation of benefits, the Board authorized CVPS, over DPS objection, to collect asset salvage costs from current ratepayers.[12]

What ENVY proposes will have the effect of overturning Board policy. ENVY proposes that the Board ignore what is now known about the decommissioning costs of the asset that is being used during 2012-2032. See findings 49-54, above. ENVY wants later generations of ratepayers to pay these costs, which will be determined at some future, as yet unknown date.

Intergenerational equity also requires that ENVY allocate to post-2012 ratepayers the ñknown but unquantifiableò costs of post-2012 spent fuel management, and not leave this to a future unknown date.

The Board should not depart from its concern for intergenerational equity. If ENVY committed to making the contributions now that are needed to fund decommissioning (and spent fuel management), it could place these costs into the rates that are passed down to CVPS and GMP ratepayers. Because ENVY refuses to do so, the Petition should be rejected. Further, the real price of ENVY power, with these costs incorporated, should constitute the baseline against which wind and other renewable sources are measured. Any decision about VY license extension that fails to recognize these costs now, and which defers them to future ratepayers, imposes intergenerational inequity and frustrates the purpose of 30 V.S.A. §§ 202a and 8001.

5.C. Conclusions as to Decommissioning Fund

[12] ñCVPS has convinced us that to adopt the DPS's recommendation regarding a net salvage allowance would create inequities by requiring ratepayers at the time an asset is retired to pay all the net salvage costs (or allow ratepayers at the time an asset is retired to receive the benefit if the net salvage costs are negative). Instead, net salvage costs should be recovered from ratepayers over an asset's expected lifetime. This concept of spreading cost recovery over time to match the costs with the benefits is similar to the purpose behind depreciation.ò

For the reasons set forth above in part 2, it would not be prudent for the Board to take the position that if ENVY accepts a new CPG, it waives all preemption arguments. Under United States Supreme Court precedent (discussed above), federal preemption may not be waivable. ENVYôs creditors or a bankruptcy trustee also could raise preemption. One of the proposed conditions urged by the witnesses, Paul Chernick, addresses remedying the deficiencies in the decommissioning fund. VPIRG asks that the Board rely on Mr. Chernickôs expert opinions regarding the shortfall and its financial implications for the people of Vermont. VPIRG is not sanguine about the likelihood that any condition imposed by the Board, to remedy the shortfall, would be enforced.

ENVY has made clear it will not provide a letter of credit or other guarantee, prior to starting operation under any extended license, of 100% of the costs of decommissioning to either NRC or Vermont standards. Findings 49-54. This Board has required that a letter of credit or other guarantee of complete decommissioning costs be provided prior to operation of other recent projects regulated under § 248. In re: Amended Petition of Deerfield Wind, LLC, Docket No. 7250, Order of 4/16/09 at 92; In re: Amended Petition of UPC Wind, LLC, Docket No. 7156, Order of 8/8/2007 at 109, 116; In re: Petition of EMDC, d/b/a/ East Haven Wind Farm, Docket No. 6911, Order of 7/17/2006 at 82. No valid reason exists to exempt ENVY from this requirement. Sections 202a and 8001 require that the field on which developers of renewable power compete against nuclear power not be tilted in favor of nuclear power.

VPIRG asks that the Board conclude that it does not promote the general good of the people of Vermont to grant a CPG to ENVY or its affiliates. The potential costs to Vermont of a loss of coolant in the spent fuel pool, of tens of millions of dollars in spent fuel storage costs, of hamstringing the development of renewable energy generation, and of the risk of ratepayer or

taxpayer payment to complete decommissioning, mean that the further development of nuclear power in Vermont should be ñstopped for economic reasons,ò as is explicitly allowed by Pacific Gas & Electric, 461 U.S. at 222-223.

6. Alternatives to VY License Extension

6.A. Findings as to Alternatives

55. Vermontôs share of VY is 200 to 300 MW. In the short term, replacement of VY would be mostly natural gas but after that lag time there would be new facilities on line. Albert 5/27/09 Tr.pp.. 81-87.

56. Some of the gap also could be filled by additional power from Hydro-Quebec, for the short term or long term. Albert, 5/27/09 Tr.pp. 81-87.

57. There is potential for 400 MW of wind in VT during 2012-2032. In the right economic and political climate, all of VYôs output could be replaced by wind and other renewable sources during the period 2012-2032. Albert, 5/27/09 Tr.pp.11, 83.

58. The cost of Vermont renewables, at $73 per MWh, is predicted to be above the cost of fossil-fueled power post-2012, at $54 per MWH, expressed in levelized 2008 dollars. Albert PFT 11/14/08 pp.12-15, Exhibit DPS-SMA 4.

59. No witness submitted sufficient evaluation to the Board of the potential for windpower to replace VY. The DPS witness, Mr. Albert, examined only the potential for windpower that would be sited in Vermont. However, since Vermont utilities purchase power on the regional grid, there is no reason to restrict the potential for windpower to Vermont sites. The potential for windpower within the region is thousands of megawatts, not hundreds. Albert 5/27/09 Tr. pp.30, 98-101.

60. Mr. Albertôs analysis, on behalf of the Department, included direct emissions costs for fossil-

fueled power. Albert PFT 11/14/08 p.13.

61. Mr. Albert did not attempt to predict the cost of VY power going forward.

62. Mr. Albert did not include any estimate of the cost to ratepayers or the public of a loss of coolant at the spent fuel pool, of paying for storing 20 more years of spent fuel, or of paying for a shortfall in ENVYôs decommissioning fund. These costs, as set forth above, range from potentially tens of millions of dollars to hundreds of billions of dollars.

63. Windpower and other renewables do not carry potential economic costs of this order of magnitude.

6.B. Conclusions as to Alternatives

The financial cost to Vermonters associated with nuclear generation is not restricted to the market price of nuclear power. In comparison, windpower and other renewable sources of energy carry no risk of huge costs to the ratepayers and taxpayers. In fact, thousands of megawatts of windpower, according to the testimony, are available in lieu of license extension, with four hundred megawatts potentially coming from within the state. State energy policy requires careful evaluation of out-of-state and in-state windpower availability before the state is committed to this license extension. Otherwise the goals of 30 V.S.A. §§ 8001, 8003 and 8004 will not be respected. Section 8001 in particular states:

> (a) The general assembly finds it in the interest of the people of the state to promote the state energy policy established in section 202a of this title by:
>
> (1) Balancing the benefits, lifetime costs, and rates of the state's overall energy portfolio to ensure that **to the greatest extent possible** the economic benefits of renewable energy in the state flow to the Vermont economy in general, and to the rate paying citizens of the state in particular.
>
> (2) Supporting development of renewable energy and related planned energy industries in Vermont, in particular, while retaining and supporting existing renewable energy infrastructure.

> (3) Providing an incentive for the state's retail electricity providers to enter into affordable, long-term, stably priced renewable energy contracts that mitigate market price fluctuation for Vermonters.
>
> (4) Developing viable markets for renewable energy and energy efficiency projects.
>
> (5) Protecting and promoting air and water quality by means of renewable energy programs.
>
> (6) Contributing to reductions in global climate change and anticipating the impacts on the state's economy that might be caused by federal regulation designed to attain those reductions.

(Emphasis added.) See In re UPC Vermont Wind LLC, Docket No. 7156, Order dated 8/8/07 pp.35-41, *aff'd* 2009 VT 19 (Supreme Ct of VT 2/6/09) (discussing benefits of windpower and purpose of §§ 8001 et seq.). A valid comparison of wind to nuclear, requires consideration of all of the potential costs, not just examination of the market price of nuclear as compared to the market price of wind or other renewable, and requires examination of renewable sources that may become available anywhere in the power grid, not just Vermont. Mr. Albertôs analysis, therefore, is useful but not sufficient to satisfy the ñeconomic benefitò and ñgeneral goodò standards of Vermont law.

In the past, the Board has found that a useful way to internalize external costs is to treat them as a discount against the market price of an alternative that does not produce such external costs. The Board ordered a discount to be applied to demand side management, rather than an adder to the cost of supply side power, in Re: Least Cost Investment, Energy Efficiency, Conservation and Management of Demand for Energy (4/16/90). Based upon site-specific evidence of potential costs from twenty more years of VY operation, including the present value costs of a loss of coolant incident, of spent fuel management and of fully funding the decommissioning trust fund, the Board should apply a discount to renewable power. This would provide a means

of making an apples-to-apples comparison and respect the intent of 30 V.S.A. §§ 202a, 248(a)(2)(B), 248(b)(4) and 8001.

The legislatureôs intent would be stymied if license extension were granted on the present record. The Petition should be denied.

Conclusion

The Petition should be denied.

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